**WHAT IS CLAIMED IS:**

1. An electrophotographic machine for printing toner-based images comprising:

a charging station for applying an electrostatic charge to a photoconductor;

a discharge station for selectively discharging the photoconductor to create a charged, latent electrostatic image;

a toner station for applying toner particles to the latent electrostatic image to develop a toner image of said electrostatic image; and

a transfer station for transferring the toner image to a receiver sheet traveling at a speed of at least 15 inches per second, said transfer station comprising a constant current source, a transfer roller coupled to the constant current source, said transfer roller comprising a metal core and sleeve with a selected resistivity, said selected resistivity being high enough to generate a sufficient transfer voltage but low enough to prevent a breakdown of the dielectric material comprising the transfer roller, receiver sheet, toner particles, air and the photoconductor.

2. The machine of claim 1 wherein the resistivity of the transfer roller sleeve high enough to provide a transfer voltage proximate to but not in excess of the breakdown voltage of the dielectric material comprising the transfer roller, receiver sheet, toner particles, air and the photoconductor.

3. The machine of claim 2 wherein the resistivity of the transfer roller sleeve is high enough to generate a transfer voltage of between 300 and 350 volts.

4. The machine of claim 3 wherein the transfer roller has a resistivity ranging from 1.0E9 + 0.5 Ω-cm to 0.5E9 + 0.2 Ω-cm.

5. The machine of claim 4 wherein the receiver sheet travels at a speed of between 15 to 35 inches per second.

6. In a machine with that moves a receiver sheet between a transfer roller and a photoconductor at a relatively high speed, a process comprising:

keeping the voltage at the transfer roller high enough to transfer toner particles and

selecting a material for the transfer roller with a resistivity high enough to maintain a voltage between the transfer roller and the photoconductor that proximate to but not in excess of the breakdown voltage of dielectric material comprising the transfer roller, receiver sheet, toner particles, air and the photoconductor.

7. The process of claim 6 wherein the relatively high speed is at least 15 inches per second.

8. The process of claim 6 further comprising:

providing a transfer roller;

applying a current to the roller to generated a transfer voltage for transferring a toner image from the photoconductor to the receiver sheet;

wherein the step of selecting comprises selecting a material for the transfer roller having a resistivity in the range of between from 1.0E9 + 0.5 Ω-cm to 0.5E9 + 0.2 Ω-cm.

9. The process of claim 8 further comprising moving the receiver sheet past the transfer roller at a speed between 15 and 35 inches per second.

10. The process of claim 8 wherein the current ranges from 40 to 80 microamps.

11. The process of claim 8 wherein the voltage across the transfer roller ranges from 510 to 1440 volts.

12. The process of claim 8 wherein the voltage across the transfer roller ranges from 800 to 1440 volts for a resistivity of about 1.0E9 + 0.5 Ω-cm.

13. The process of claim 8 wherein the voltage across the transfer roller ranges from 510 to 1100 volts for a resistivity of about 1.6E9 + 0.5 Ω-cm.

14. A process for selecting a material for a transfer roller comprising the steps of :

supplying a constant current to a transfer roller having a conductive core and a sleeve on the core with a selected resistivity;

feeding receiver sheets between the transfer roller and a photoconductor at a relatively high speed;

selecting a material for the transfer roller that is high enough to generate a sufficient transfer voltage but low enough to prevent a breakdown of dielectric material comprising the transfer roller, receiver sheets, toner, air and the photoconductor.

15. The process of claim 14 wherein the resistivity of the material for the transfer roller is selected to provide a transfer voltage proximate to but not in excess of the breakdown voltage of the dielectric material comprising the transfer roller, receiver sheets, toner, air and the photoconductor.

16. A process for selecting a material for a transfer roller comprising the steps of :

supplying a constant current to a transfer roller having a conductive core and a sleeve on the core with a selected resistivity;

feeding receiver sheets between the transfer roller and a photoconductor at a relatively high speed;

selecting a material for transfer roller with a resistivity that is inversely proportional to the speed of the receiver sheet through the transfer station.

17. The process of claim 16 wherein the resistivity is high enough to generate a sufficient transfer voltage but low enough to prevent a breakdown of the dielectric material comprising the transfer roller, receiver sheet, toner, air and the photoconductor.

18. The process of claim 17 wherein the resistivity of the transfer roller is selected to provide a transfer voltage proximate to but not in excess of the breakdown voltage of the dielectric material comprising the transfer roller, receiver sheet, toner, air and the photoconductor.